THE
VETERINARY RECORD.

The Official Journal of the National Veterinary Medical Association of Great Britain and Ireland, Limited.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 2. JANUARY 12, 1924. VOL. 4.

The Integration of Medicine.*

By The Right Hon. Sir CLIFFORD ALLBUTT, P.C., K.C.B., M.D., F.R.S.

If for years slowly and almost silently our work makes its way we must be content; our experience of the world teaches us to be content; but happily, now and then, after long hewing in the dark forest, we break into the light; we find ourselves almost suddenly upon a peak, our way open and bright before us, and our cause justified before men. Such a festival is our meeting to-day.

The barriers of convention, which ought to be slender and occasional, are of all the most inveterate and impregnable. Of such have been the barriers devised by mediæval perversities which, to its grievous injury, have split up medicine into fractions. As physic was divorced from surgery and mind from body, so the diseases of animals and plants were separated from those of mankind. The folly of the division of the medicine of the hand from the medicine of the bottle has now become so glaring that our next festival may be on the blowing up of this rampart; indeed, the gynæcologists have exploded their end of it already. But it is a big business to transform a mediæval castle, with its baileys, barbicans and keep, into a modern domain.

Let us rejoice then together that by the liberality, foresight and generosity of the Royal Society of Medicine we are enabled to-day to celebrate the unity of medicine as a biological study. That you have made me your President on this memorable occasion, for in the history of medicine this day will take a memorable place, is a privilege for which I am deeply grateful to you. We have the mind of James Paget with us; and that of Sir John Bland-Sutton, happily still in the body, with us also. By him I have felt that this chair ought to have been occupied; for, while I have been talking about comparative pathology, he has been working in the field; but he has been called to a higher place, a distinction on which we all cordially congratulate him. For personal help in our campaign I should also like especially and gratefully to mention General Sir Frederick Smith, Professor F. T. G. Hobday, Mr. W. M. Scott, of Bridgwater, and Professor T. B. Wood, of Cambridge.

* President's Introductory Address at the Inaugural Meeting of the Comparative Section of the Royal Society of Medicine. Reprinted from the Society's Proceedings.

A PRELIMINARY SURVEY.

I think you will agree with me that we must not swarm upon our new estate and try to do too much at first. If we do we may tire ourselves, overrun our work, and tread down our crops. Let us survey our ground carefully and make good by degrees. Many of our supporters are very busy men, and may be discouraged by too long papers or too many meetings. The secretaries will, I am sure, do their best to see that the papers laid before you are concise, relevant, and not too abundant.

Professor W. H. Welch, of Baltimore, has written to me in these words: "Your first thoughts will be those of comparison . . . to shed cross lights reciprocally from the pathology of one kind of living thing upon another, watching the variations of functions in various biological systems." Consider indeed for a moment what, without the comparative method, would have now been the state of those other sciences which have worked by this method for many years past. Without the comparative method, what of anatomy, or of anthropology, or of embryology; or what again of philology, of history, or even of theology? Without the method they would never have attained to the master conceptions which have lifted those studies from the plane of hobbies, or of literary amenities, or of mere erudition, to the rank of scientific ideas. Incidentally it is true that pathologists have already done much by their experimental researches—as into the properties of the cell, in the study of infections, and so forth—to gather in some comparative pathology, by parcels; but this is a straggling collection of knowledge; it gives us no general view of the whole, nor co-ordination of its parts.

PATHOLOGICAL BIOLOGY.

A certain portion of the time of this Section will be devoted to the utilitarian side of our subject; to the study of the diseases common to man and animals—many of which may be carried by animals to man, and conversely; to the ravages of disease in our herds and our crops; and, on the other hand, to the respective immunities and defences of plants and animals, as, for example, the immunity of the ox tribe to glanders, mentioned by Professor Hobday at the Glasgow meeting of the British Medical Association, or again to our experience of anthrax serum, effective in man, in animals ineffectual; and again to the maintenance of the balances of species in the economy of nature. But, as I wrote in the *Times* in 1906 (June 5th), while not neglecting these instant

needs, we shall not permit our attention to be distracted from the pursuit of the larger and more disinterested researches: from a pathological biology which hereafter shall give us not only a control of several diseases, but an insight into large and fertile principles, foresights and controls over wide fields of nosology; interpretations of the various comings and goings of the manifold kinds of disease in all living things—plants and animals, of specific kinships underlying superficial differences, and of disorders of the more complex animals by the light of elementary changes in the simplest animals and in plants in which the plasticity, I had almost said the pregnancy, of protoplasm shows us in manifold ways its marvellous endowments. We must have a keen eye to practice, whence indeed many of our most fertile problems arise; but we must aim also at the building up of the great principles upon which depends the practice of the future. I may recall the following reflection of the Agricultural Correspondent of the *Times* of 1906 (presumably Dr. Fream): "From a pathological point of view they (diseases of sheep) are a perfect mine of wealth, for they are fraught with scientific problems of the highest interest and importance, and are most suggestive of what may turn out to be a new light on the pathology of many of the contagious and infectious diseases of man and the lower animals." At this moment there appears in the *Proceedings of the Royal Society* (Ser. B, vol. xcv., p. 228, Sept. 1st, 1923) a very interesting study of that strange monstrosity, achondroplasia. Few human achondroplastics manage to get born: of the few were a certain Egyptian god—who perhaps did not need a uterine phase—Æsop and Quilp. They are dwarfs with big heads and bodies, short arms and legs, and fin-like hands. Now Mr. Crew has illustrated the pathology of these monsters by certain monstrous calves of the Dexter breed, and postulates a perversion of the pituitary gland as the cause of the monstrosity. Moreover, he points out that this deformity may even shed some light upon the species problem.

I ought not to close an address, even so informal as this, without at least an allusion to the name of Pasteur, who threw open vast fields of comparative pathology; to mention the name of the master is sufficient to turn your hearts silently to the Centenary Commemoration of one of the greatest of men. I will conclude these remarks with the following quotation from another master of biological science, John Hunter: "In the course of a variety of experiments on animals and vegetables I have frequently observed that the results of experiments in the one have explained the economy of the other, and pointed out some principle common to both."

I now ask you to join me in wishing long life and prosperity to our new Section. In Benjamin Franklin's now proverbial phrase, "Hard work is still the road to prosperity, and there is no other."

Mr. H. R. Beeton said that as a layman who had been privileged to be present on that interesting occasion, he was glad of an opportunity to express the general gratifi-

(Continued at foot of next column).

Cryptorchidism in Animals and Man.*

By Frederick Hobday, C.M.G., F.R.C.V.S., F.R.S.E.

Before commencing, I should like to be allowed to say how very much I appreciate the honour of being asked to introduce the first discussion before this new Section of Comparative Medicine.

The subjects which may be brought forward before a Section of this kind are so varied and numerous that the reader of a paper may be legitimately excused if he is puzzled to know from which side to select his title. There are so many sides to comparative work, so many pathological conditions and surgical operations which have analogies, and so many others which have differences; for although the veterinarian may perform a similar operation on his patients as is done by the human surgeon upon man, it is often done with a totally different object.

I have chosen the subject of cryptorchidism partly because it is an abnormality which is as common in the domesticated animals as in man, if not commoner, and in this connection I want us first to compare notes particularly on the hereditary aspect of the question; and, partly, because I have the experience of over thirty years in operating for the relief of such cases in animals.

The results of this trouble are looked at by the medical and veterinary practitioners from a totally different point of view, as a successful operation in veterinary practice always means an increased monetary value of the patient to its owner, whether that value is represented in the horse tribe by the pecuniary aspect on account of the resulting docility, or whether it is from a sentimental point of view, as in the cat and dog (in the former, to do away with the objectionable smell of the urine which always

(Continued from previous column.)

cation at the important steps in the history of medicine involved in the inauguration by the Royal Society of Medicine of a Section of Comparative Medicine. Not only were they all richer for the promise of increase in knowledge, but he (the speaker) had reason to know the grievous disabilities under which Animal Medicine had laboured for so long as a consequence of the ignorant isolation to which it had been condemned. He was not acquainted with the steps which had led to this event, but for a long time he had watched, with great interest, the exemplary devotion and persistence with which the President had advocated the cause of Comparative Medicine, and he (the speaker) could enter into the satisfaction with which Sir Clifford was entitled to contemplate this measure of its realisation. It would, indeed, have been extraordinary, in these days when physical science was revealing so dramatically the unity of nature, if the investigation of human and animal disease had continued to be pursued as separate studies.

* Presented at the Inaugural Meeting of the Comparative Section of the Royal Society of Medicine. Reprinted from the Society's Proceedings.

accompanies the male, or in the case of the dog to do away with his irritable temper or to prevent him wandering). Thirdly, because I had the promise of the attendance here this evening of several well-known surgeons who have made a special study of this abnormality in man, and I am hoping on that account that the discussion which will ensue will bring out many points of mutual interest. There is much in common in the subject of cryptorchidism in animals and man, but there are also some very interesting contrasts and variations. With the human surgeon it is a matter of importance that the testicle shall be saved if possible; with the veterinarian it is of much more importance that this offending organ should be removed; this being necessary in our patients on grounds of economy, safety (both to man and other animals), and practical utility.

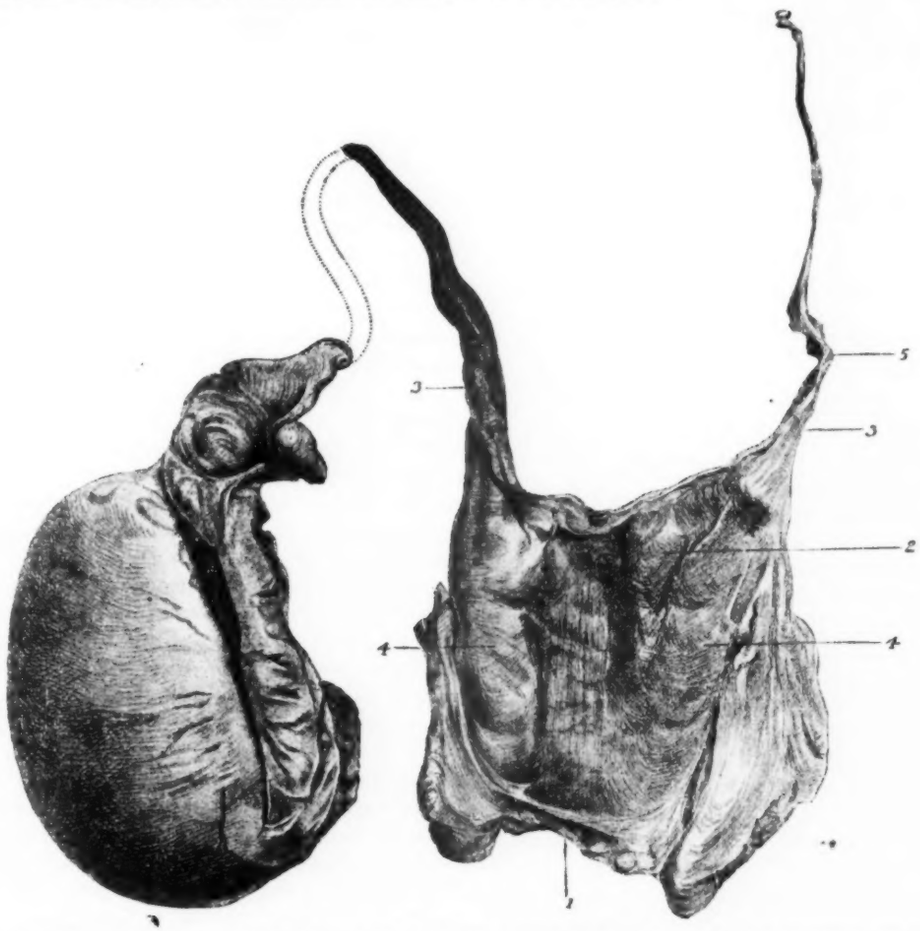

FIG. 1.—Abnormal organs of a monorchid horse, showing the scrotal testicle and the portion of the generative organs present on the other side beyond the fundus of the bladder. (1) Fundus of the bladder. (2) Fold of peritoneum uniting the vasa deferentia. (3) Vas deferens. (4) Bulbous portion of the vas deferens. (5) The vas deferens on this side was pervious as far as this point.

Heredity.—Our first reason in pedigree animals concerns the question of heredity, for there is no condition with which we have to deal in veterinary surgery which is more inherited than that of the undescended testicle. The tendency for a horse with one testicle retained and one in the scrotum to produce progeny having similar defects is well recognised not only by the veterinary surgeon but by every intelligent breeder of pedigree stock; and it is well illustrated in districts where a cryptorchid stallion has been allowed to be used at stud. That the abnormality can be passed on through the female line is also well recognised, and a filly foal which has been got by a unilateral cryptorchid sire must always be an object of suspicion if put to the stud. The same tendency is well recognised by dog breeders, and in examining a male dog for stud purposes the veterinary practitioner would always draw the careful attention of the prospective buyer of the risk he ran in using at stud a dog or cat whose testes were not both normally in the scrotum.

We all know full well the sequel which results to an animal on account of the removal of its testicles, how it becomes quieter in its habits with other animals of its own species, and more docile and more amenable to the will of man, and the successful removal of the hidden testicles has created an opening for the specialist in veterinary surgery in a similar manner to the way in which these operations have given opportunities in human surgery.

We term the animal with the hidden testicle a

cryptorchid just the same as you do, and it may be unilateral or double. We have, too, "monorchids," when one testicle is entirely anatomically missing, and occasionally one meets with an "anorchid" in which both testicles are anatomically absent. The agricultural community know an animal of this kind better under the name of "rig" or "ridgling," and the value of such a beast is so much deteriorated that it may even become entirely unsaleable, or, at any rate its price, if the prospective purchaser discovers the defect, is less than one-half or one-third of its proper value. I have here specimens or sketches from actual specimens in which the condition of monorchidy and anorchidy are definitely manifested, and I have also photographs of cases of arrested development accompanied by cryptorchidism (Figs. 1, 2). An animal with this defect is usually known to the farmer by the name of "Will Gill," and is often spoken of as an hermaphrodite, but although I have met with, and operated upon, some thirty of these cases they have always proved to be males, and I have always found testes present either in the inguinal canal or in the abdomen. They have all been true cases of arrested development.

The diagrams which I now show on the screen are taken from Colin's "Veterinary Physiology," and illustrate well anatomically the position of the undescended testicle in the fœtus at various stages and explain some of the reasons why the condition of cryptorchidism may result. For example, the peritoneal attachment may be abnormally short or abnormally long at a certain period of fœtal life. With the former the result might be that the testicle would never descend from its position in the lumbar region, but become almost a fixture, or it might descend a little way but not sufficiently to reach the internal inguinal ring. If abnormally long it might not reach the internal inguinal ring just at the time when this aperture would be sufficiently relaxed to admit of its passage, and it might not reach it at all, but be pushed out of its place by some of the internal organs. The testicle itself may be abnormally large, being cystic or otherwise diseased, and the epididymis is frequently found to be excessively large or misshapen. A short vas deferens or spermatic artery, too, may cause retention. The inguinal canal may be so narrow, or its entrance or external exit so small and abnormally contracted, just at the period when the testicle approaches, that this latter organ cannot gain admittance; or, if admitted, cannot pass through into the scrotal sac. The gubernaculum testis, by which the testicle is drawn through the canal towards the scrotum, may be paralysed so that its natural function as a guide is useless; and, lastly, there may be some abnormal contraction of the skin of the scrotum by which, although the testicle has reached the external inguinal ring or even passed through it, the organ is either tightly held there or forced under the skin of the prepuce, abdomen, or thigh.

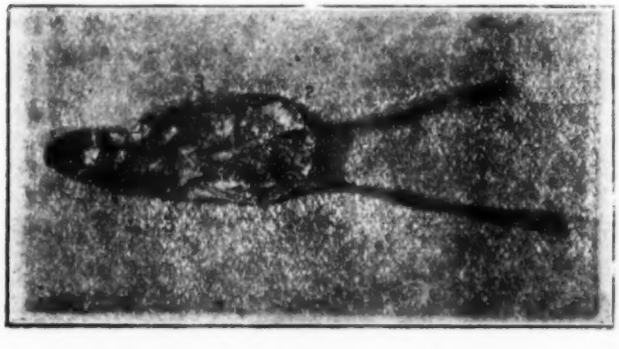

FIG. 2.—Abnormal genito-urinary organs of an anorchid colt. (1) Small masses of fat in the position of the testes. (2) Bladder. (3) Vesiculæ seminales.

Although very inadvisable to use at stud an animal which has only one testicle visible, it is well known that such an animal can procreate his species, but when the testes are definitely in the abdomen, such an animal is always sterile; at any rate, up to the present, I have never been able to find a case otherwise. When examined microscopically after removal it is not rare to find spermatozoa in testicles which have remained in the lower part of the inguinal canal, but in those found in the upper part and in those taken from the abdomen itself this is very exceptional. In fourteen instances Professor M'Fadyean microscopically examined and reported upon testes which I had personally taken from the abdomen, and spermatozoa were discoverable twice. In eleven taken from the inguinal canal five contained spermatozoa; three of these were in the extreme upper portion of the canal, and all were beyond dispute in such a position that they could be termed "inguinal" testicles. They were quite out of sight even when the patient was chloroformed and cast on its back. This point is worth drawing attention to, and it has been commented upon by Sir John Bland-Sutton in a chapter which he very kindly added to a little book which I brought out on this subject some years ago. He states that "in this book the author furnishes evidence that in horses testes retained in the abdomen or inguinal canal contain spermatozoa. In man this is rarely the case. After careful observations extending over many years I only once found spermatozoa in an undescended testis." Fertility, however, depends upon many things, including the number and state of maturity of the spermatozoa. The actual presence, therefore, of a few spermatozoa in the semen does not necessarily imply power of propagating species. In the horse in particular it is always a wise plan to convert the animal into a gelding on account of the treacherous disposition which may come on at any time and which is usually an accompaniment of the cryptorchid. He is not only treacherous and uncertain in temper, but he is almost invariably a continual nuisance to his owner, endeavouring on every possible occasion to mount any four-footed animal which comes within his range. It is impossible to turn him out to grass, as he will never stop in one field, and one never knows when his antics will cause an accident either to himself or to some other animal. For this reason, therefore, it is necessary to perform

the operation of castration, and this is briefly described in the following way :—

I use the horse for my illustration, because this is the animal on which we are called upon to operate most frequently for cryptorchidism. The patient is fasted for about twenty-four hours before the time of operating, water being allowed in limited quantity until some five or six hours prior to the actual event. Not having quite the sterilising facilities of the human operating theatre, we select a good straw bed or as clean a place as possible in a grass field, and our patient is cast and secured by the aid of a rope, chloroform being then administered. The skin is prepared by being cleansed with petrol and painted with tincture of iodine or iodized chloroform. Here I would like to mention that for the past twenty years I have hardly ever washed the skin of an animal before opening the abdomen, and I have no cause to regret omitting this procedure, and I speak from an experience of more than 4,000 laparotomies.

A shallow incision about four or five inches long is made through the skin almost directly over the inguinal canal, care being taken not to injure any of the large inguinal vessels which lie immediately underneath. The inguinal veins are often so intensely varicosed that the inexperienced operator has been known to mistake them for testicles and to cause hæmorrhage which may even be fatal. Once the skin is cut through, the tissues are pulled apart and the remainder of the operation of finding the testicle is done by the fingers, without again having recourse to the knife. The hand is then introduced with the fingers in the shape of a wedge and carefully rotated past the large veins into the inguinal canal. If the testicle is present it is grasped and withdrawn, being removed with the écraseur. Sometimes the epididymis alone is in the canal, and the body of the testicle is in the abdomen, and cannot be withdrawn without penetrating the wall of the latter. In such a case, if moderate traction is insufficient, the better plan is to enter the abdomen. On several occasions in cryptorchid horses I have found the distance between these two to be as long as five or six inches, and frequently it has been necessary to use the écraseur twice, first to remove the body of the testicle through the abdominal wound, and secondly to remove the epididymis by way of the inguinal canal. Inexperienced operators have on numerous occasions removed the epididymis alone, thinking that this represented the abnormal cryptorchid testicle, and the result has been that in a few months the horse has again become as troublesome as ever. I must admit faults in this direction in years gone by myself, and the following instance is typical as an illustration. In July, 1899, when operating on a cryptorchid horse, I removed the epididymis only, finding it at the extreme top of the inguinal canal exterior to the abdomen. The colt appeared quite cured of his troublesome habits for about six months, and then became as bad as ever. In the spring of 1901 the animal became quite unmanageable and dangerous, and a further operation was decided upon. On June 15th that year the abdomen was entered and a full-sized flabby testicle, minus the epididymis, was extracted. Recovery was uneventful and the colt became perfectly tractable and quiet. If the testicle is not found in the canal, the abdomen is entered through the abdominal muscle, which is penetrated by the aid of the finger nail. Sufficient space is made at first to admit the fore and middle fingers only, with which search is made for the missing testicle. If found, it is withdrawn. If unsuccessful, the whole hand is introduced and a careful search made. The anatomical guides, if difficulty is experienced, are the spermatic artery or the vas deferens, as illustrated by the illustrations on the epidiascope taken from Sir John M'Fadyean's "Anatomy of the Horse." Once the testicle is found and withdrawn it is removed by means of an écraseur or emasculator. In consistency an abdominal testicle is very flabby as compared with those found in the scrotum.

In the dog and cat the site for the operation is in the median line, and as a general rule the testes are readily found floating loose among the intestines. In the bull, pig, dog and cat it is not uncommon to find a misplaced testicle subcutaneously some little distance away from the inguinal ring, a condition which is rarely, if ever, found in the horse. In the horse the position in which the missing testicle is found, if not in the inguinal canal, is usually just within the wall of the abdomen, a short distance from the internal inguinal ring. It may be floating loose amongst the intestines, and it may be close up under the loins.

Abnormalities.—The cryptorchid operator must always be on the look-out for abnormalities, and it is for analogies in these that I particularly ask my confrères engaged in human medicine to speak. In the horse we have a most wonderful variety both in size and characteristics, and this applies not only to the older animals, but to the two-year-old or even the yearling colt. Some of the specimens I have here to-night have been taken from quite young animals, one especially which I obtained last week, and which Sir Arthur Keith and Professor Shattock have kindly examined—a cystic dermoid containing both hair and bone, was taken from the abdomen of a cart colt only 12 months old (Fig. 3). These abnormalities vary from the size o a walnut to the size of an ordinary Rugby football, and contain such foreign bodies as worms, hair, cartilage, osseous or dental structures, and various kinds of tumour tissue. They may be very cystic or very hard and cirrhotic. They may be entirely degenerated and adherent to the peritoneum or to some abdominal organ. One case has been recorded in which the retained tumour was 79 cm. in length, 69 cm. in breadth, and the whole testicle weighed 100lb. In the dentigerous cyst depicted on the epidiascope the testicle was 6½in. in length, there was gland tissue in the centre and a dermoid cyst at either extremity. In the anterior portion there were plates of bone and cartilage, and in the centre of the cavity there was a roundish mass about the size of an orange containing several teeth in various stages of development. One in particular

was an almost perfect molar. being 2½in. in length and grooved in the usual way. Six of the other pieces were distinctly recognisable as molar teeth, microscopical examination showing that the three usual constituents, enamel, dentine, and cementum, entered into their composition. The posterior extremity of the testicle contained a cyst having a wall chiefly composed of bone and cartilage. Inside this cavity were two smaller ones containing a coil of hair,

Cystic testicles have usually to be reduced in size before they can be withdrawn. This can generally be done with the finger nail, the contents escaping into the abdominal cavity, or a trocar or hollow needle with a rubber tube attached may be used. Dewar and Anderson have reported a case in which a cystic testicle removed from the abdomen of a two-year-old horse weighed 3lb. 2oz., and when emptied weighed only 5oz. 1dr. It measured over

FIG. 3.—A typical dermoid from the abdominal testicle of a horse. For this I am indebted to Professors Williams and Taylor, M.R.C.V.S., formerly of the Edinburgh Veterinary College.

black in colour, and mixed with the debris usually found in these cases. True dermoid cysts are as common as those of the dentigerous variety, and in the one which I now show you there was found when incised five separate cavities, four of which contained hair, in colour black, brown and grey, and some of them measured 7in. in length. In the centre of the whole mass there was an irregular bony plate, and the rest appeared to be fibrous tissue (Fig. 4).

18in. in diameter one way and over 16in. the other. I myself have met with one which was quite as large as an ordinary Rugby football, and which I was unable to rupture as it kept slipping away from me. It had a cord about 18in. in length, and this I pulled into view in the form of a loop, severing it with my écraseur and allowing the balloon-shaped body to remain in the abdomen. It was impossible to remove it without making an enormous hole, and this pro-

cedure I have adopted on several occasions under similar conditions.

Of the various kinds of tumour tissue, I have had personal experience of sarcoma, embryoma, fibroma, and lipoma, the microscopical opinion being given by experts in every case. The lipoma was exceptionally interesting on account of its rarity, as I understand from Professor Shattock that it was the first of its kind which had ever been recorded, and that it has never yet been seen in man. One half of the specimen is in the Royal College of Surgeons Museum, and the other half is here to-day.

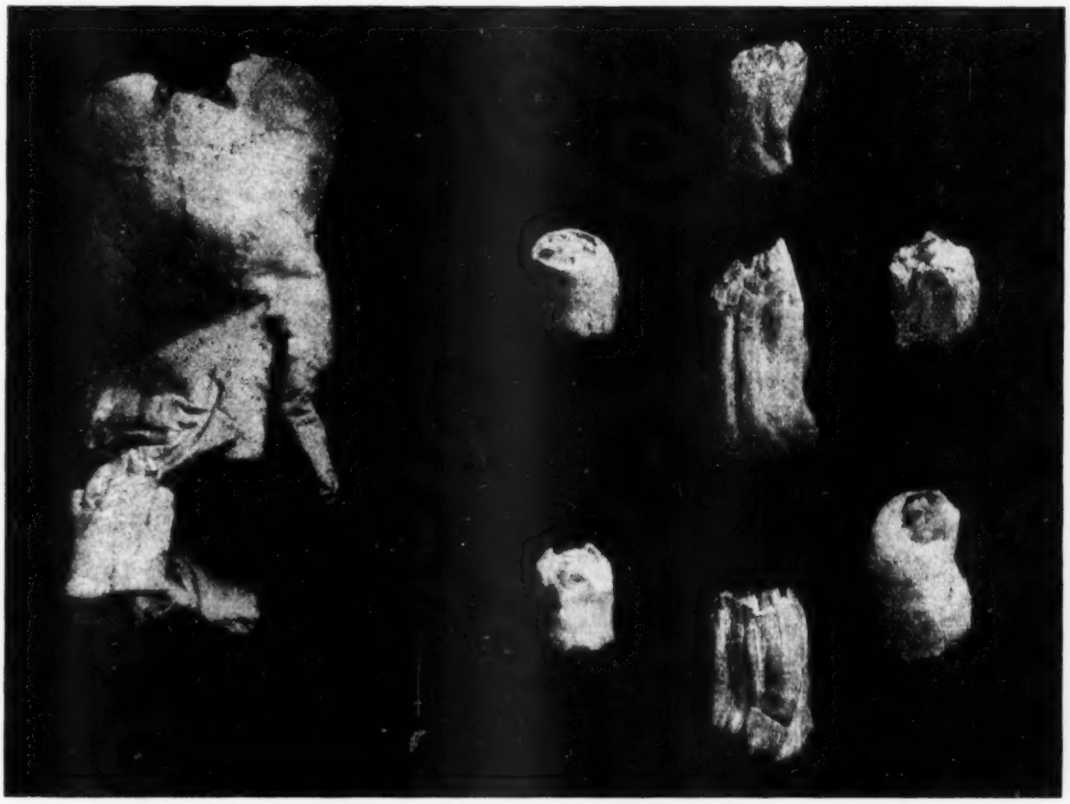

FIG. 4.—Molar teeth (in various stages of development) removed from a dentigerous cyst taken from a cryptorchid horse's abdominal testicle by Mr. Inglis, F.R.C.V.S. On the left is seen the curious misshapen testicle itself. For this illustration and description I am indebted to Professors Williams and Taylor, M.R.C.V.S. (*Veterinary Journal*, 1901).

The next three illustrations on the epidiascope are typically illustrative of some of the abnormalities met with in the horse by the cryptorchid operator. For the pathological examination and description I am indebted to Sir John Bland-Sutton.

Fig. 5 shows a cystic embryoma removed from a Shire colt three years of age. The left testicle was in the scrotum and weighed 10½oz., the right one in the abdomen weighing 25oz. The latter was as large as a cocoanut. The bulk of the tumour consists of a large cavity filled with fluid, ond on the floor there is an embryoma replacing the paradidymis. The same body (A) lying on the wall of the cyst represents the body of the testicle, B is made up of embryonic tissue containing secreting glands, tracks of bone and cartilage. A cystic testicular embryoma of this nature is stated by Sir John Bland-Sutton to be a rarity.

Fig. 6 shows a cystic testicle removed from a Shire colt 13 months old. The left testicle was in the inguinal canal and the right in the abdomen. The latter was cystic and weighed 2½lb. after the fluid had been removed. The body of the testis is as large as a turkey's egg and contains three cysts filled with yellow fluid separated by narrow strands of tissue containing seminiferous tubules. This has nothing in common with the condition known as general cystic disease of the testes in man, for in the latter the disease arises in the paradidymis between the body of the testes and epididymis, and although the secreting tissue of the testicle is compressed by the tumour the cysts never invade it.

The third one was from a bay Shire colt two years old. The right testicle was in the abdomen and weighed 1½lb. Microscopically the tumour contained the mixed elements of an embryoma.

Another foreign body which is frequently found in the testicle of the cryptorchid horse is the worm *Strongylus edentatus*. It may be in the envelopes of the testicle or it may be in the tissue itself, and

I have a specimen here to-night showing the latter condition (Fig. 7). In the human subject I understand that living acari, *Histiogaster spermatagus*, even to the number of 800, have been found in the contents of a cyst of the testicle.

I have dealt principally until now with cryptorchidism in the horse, and shall only briefly allude to this condition in the other domesticated animals, as, except in the case of the dog, it is not a condition which can be said to be very commonly met with. We do, however, get it in the bull, when the abdominal site of incision for its removal is usually made in the flank. Similarly in the ram, as illustrated in the pictures which you have before you. The pig, too, is opened in the flank, much in the same manner as when operating on the female for ovariotomy. Of

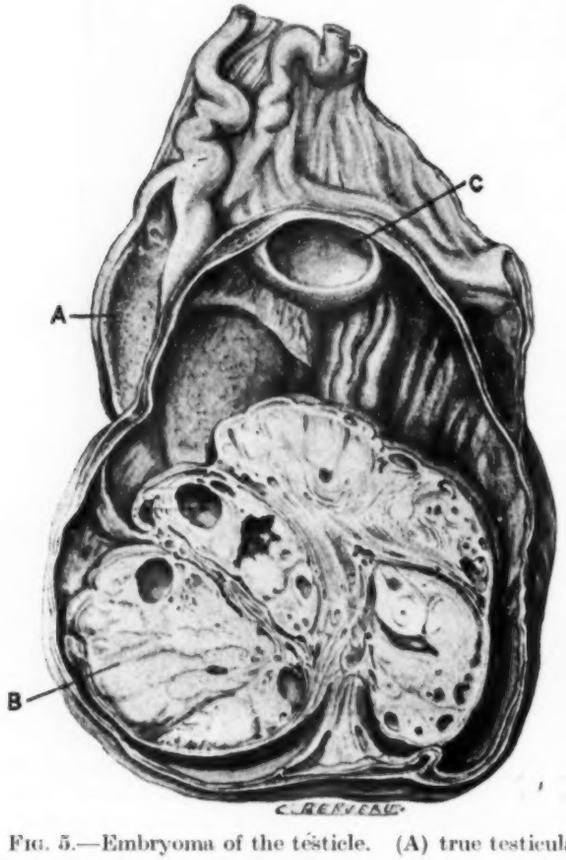

Fig. 5.—Embryoma of the testicle. (A) true testicular tissue; (B) tumour tissue; (C) cyst.

the dog, through the kindness of Sir John Bland-Sutton, I am able to show you a most peculiar condition of torsion of the cord of a retained testicle.

The question of cryptorchidism in man I have purposely barely touched upon, as I know that it is best left in the hands of Mr. McAdam Eccles, who will open the discussion. I read in text-books of human surgery that almost every variety of neoplasm may occur in the human testicle, but they are not very common. This you see is somewhat in contradiction to what we find in the horse. I read also that the benign connective tissue tumours (lipoma, fibroma, chondroma and osteoma) are seldom encountered. Sarcomata are fairly common, occurring in children and early adult life; more frequently in undescended testicles than in those normally placed, and generally of the round-celled or spindle-celled variety. I understand that a large proportion of the tumours of the testicle are carcinomata. Dentigerous cysts are not at all infrequently met with in the ovaries of women, but they are comparatively rare in the testicles of man. The directly opposite condition exists in the domesticated animals, for experience teaches us that dermoids and dentigerous cysts are comparatively common in horses, whilst I have yet to see this condition in the ovary of the mare, and I speak from an experience of over 1,200 cryptorchid cases in the horse alone and nearly 500 ovariotomies per-

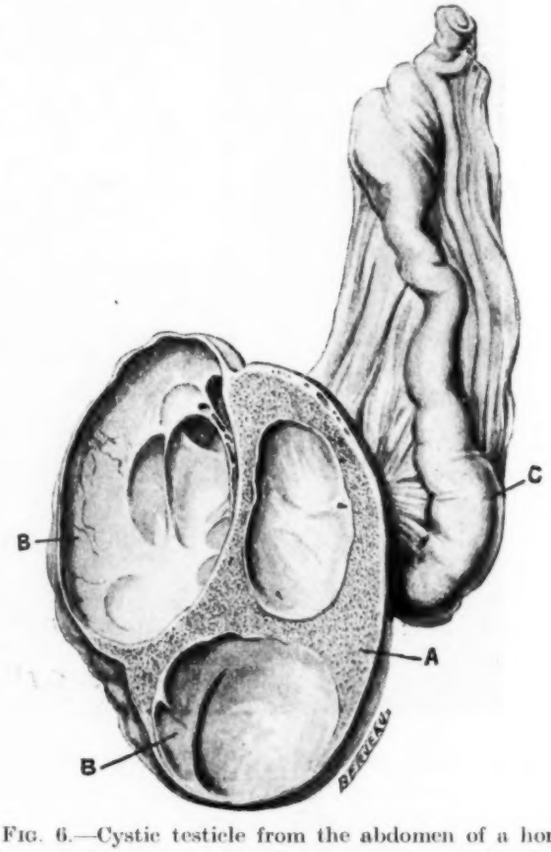

Fig. 6.—Cystic testicle from the abdomen of a horse. (A) testicular tissue; (B, B) cysts; (C) epididymis.

formed on vicious mares. I do not attempt to explain this, but I draw particular attention to this fact as a point for discussion, and I again especially emphasise the hereditary tendency of cryptorchidism in animals; as I understand that, although I read that about one in every 500 men has his testicles misplaced, the question of it being hereditary as far as man is concerned is not generally accepted.

Discussion.

Mr. W. McAdam Eccles: I shall confine my remarks strictly to abdominal retention of the testis

n m an, and I shall deal with the subject under he adings.

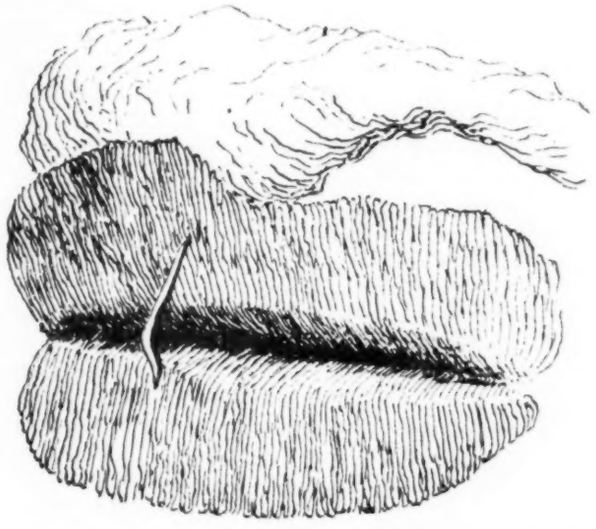

FIG. 7.—Abdominal testicle laid open and showing specimen of *Strongylus edentatus, in situ*.
(From a sketch made at the time by Mr. Santy, M.R.C.V.S.)

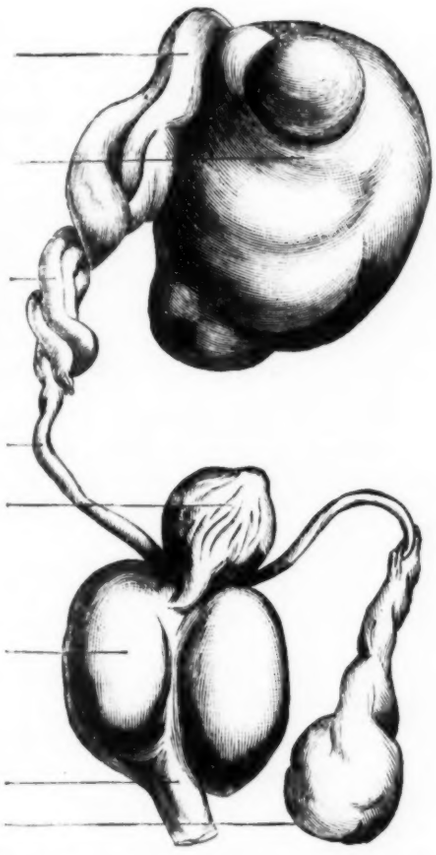

FIG. 8.—Torsion of the cord in a canine cryptorchid testicle (Sir John Bland-Sutton).

The illustrations are taken from the author's "Castration and Ovariotomy of Animals," published by W. and A. K. Johnston, Edinburgh.

(I) *Etiology.*

The ovary remains within the abdomen. The testis migrates from that cavity. Why? The clitoris remains a clitoris. Its homologue in the male becomes the penis. Why? The answer to the latter question in no small degree will answer the former.

The inter-relation influence of the endocrine glands we now know has a profound effect on the formation of secondary sexual characteristics, and if every case of abdominal retention of testis was bilateral, some imperfection of this inter-relation might be a sufficient explanation of the arrest. But internal secretions act everywhere through the blood stream, although it is evident they have a selective action on certain particular organs.

When we have one testis only remaining within the abdomen whilst the other has migrated fully, and has developed fully for its age, we are faced with a much wider problem, and one to which, I confess, I see no present answer.

One may say that the vas, vessels, and other constituents of the spermatic cord are too short to allow the testis to pass beyond the confines of the abdominal cavity; but this does not help us much, for what factor is at work which has prevented the elongation of the spermatic artery on the one side whilst the artery on the other has its due length? With regard to heredity: I have asked the parent or guardian of every case, or the patient himself, for family history of like condition in grandfather, father, or brothers, and not more than two per cent. give it. This small number may be due to the fact that cryptorchidism in an individual is not blazed abroad.

(II) *Function.*

It is a question whether an arrested testis is ever fully developed. I am quite sure it is wrong to speak of these testes as atrophied. An atrophied organ is one which, having been of full size and development, retrogresses. But in the abdominal testis in man there seems to be a better chance of development and spermatogenesis than in the testis which is arrested in the inguinal canal.

There are quite a number of cases on record in which a man with double abdominal retention of testes has procreated children, but there are very few in which double inguinal arrest has permitted of parentage.

Most abdominal testes have the power of producing an internal secretion, but perhaps not of the same type as that of a fully developed and fully migrated organ.

(III) *Morbid Anatomy.*

A testis within the abdomen is liable to all the diseases to which a fully migrated testis is prone.

(i) Inflammation of an abdominal testis may lead to mistakes in diagnosis if care is not taken. Thus, gonorrhœal epididymitis of a testis lying in the right iliac fossa may readily simulate acute appendicitis.

(ii) Cysts of the testis which has remained within the abdomen are rare in the human subject. Simple

cysts of the epididymis have been described. "Dermoid" cysts of the ovary (teratomata) are by no means rare, but I have never seen a true "dermoid" of a testis lying in the abdominal cavity. This is an interesting contrast with the horse, in which the dermoid cyst with teeth and other dermal structures is fairly frequently seen, as Mr. Hobday has shown.

(iii) Neoplasms of the abdominally retained testis undoubtedly occur, but it is still open to question whether malignant disease of the testis arrested within the abdomen is proportionately more frequent than that of the fully migrated organ. In the museums but few are found, although there may be numerous examples from the scrotum. Malignant teratoma, carcinoma, sarcoma, and chorion-epithelioma have all been seen, and are all highly malignant, becoming rapidly disseminated.

(iv) Scrotal hydroceles and herniæ may be associated with completely retained testes.

(IV) *Treatment.*

(*a*) In unilateral abdominal retention with a fully migrated testis on the opposite side, the hidden testis may be left alone. As a rule there is no "vicious" tendency in the human to necessitate its removal.

(*b*) In bilateral retention, nothing can be done. It is impossible to bring either testis into the scrotum, which by the way is almost invariably formed ready to receive its proper contents, but has not been distended by them. To remove a pair of abdominal testes would be to remove organs which may have some function through internal secretion.

(*c*) Inflammation or enlargement of an abdominal testis calls for its prompt removal.

Sir JOHN BLAND-SUTTON: A strange fascination surrounds the descent of the testis, and though it has been the subject of careful study and contemplation from the time of Haller and Hunter to the present day, we know nothing concerning the cause of its transition from the loin to the scrotum. Theory has of course been busy, but there is nothing that surely satisfies.

Hunter made it the subject of very careful study, traced the course of the testis from the loin to the scrotum, and detected the curious muscular bands which are supposed to steer it through the inguinal canal. The notion that the functional imperfection of a retained testis is due to its non-descent is false.

Hunter, in his famous paper, insists that the non-descent of the testis is due to its imperfection, and this opinion stands.

The new knowledge of the power exerted by the internal secretion of ductless glands has not altered the situation, because one testis may enter the inguinal canal, be extruded into the scrotum, and exercise its function to the highest degree, but its companion may be retained in the loin, or does not venture beyond the confines of the inguinal canal. This is sufficient to exclude a hormone supplied to the blood by the secretory action of the testis. The transition of the testis is associated with those ill-understood movements sometimes called the re-adjustment of the peritoneum that occur at a late period of fœtal life.

Migration of the testes is not a mere question of weight or pull; there is something more subtle, something akin to that curious impulse which causes birds to migrate, eels to transfer themselves from fresh water to the depths of the Atlantic Ocean for spawning purposes, and the extraordinary impulse which compels Palolo worms to leave the water in the reefs around the islands of Samoa and Fiji to seek the sand of the seashore in multitudes on two days in October and November, the days being those in which the moon is in her last quarter.

Cryptorchidism in horses differs from this condition in man on account of the liability of the retained testis to be occupied by a tumour, usually a dermoid. In man a dermoid is rare in a descended testis, but extraordinarily rare in an undescended testis, whereas in horses it is fairly common.

Our knowledge of testicular dermoids dates from 1855, when Verneuil published his classical paper. Thanks to Mr. Hobday's surgical exploits, I have had excellent opportunities of studying such tumours, and can confirm in every particular Verneuil's discovery, that such tumours are not tumours of the testis in the strict sense, but that they arise in the tissue lying in relation with the hilum, and occupying a position between the body of the testis and its epididymis. This holds good for man, and in at least one example published by a trustworthy surgeon, such a dermoid was so slenderly attached that it was removed without damage to the secreting tissues of the testis.

The cause of such tumours, like the source of the impulse of testicular migration, remains an unsolved problem, but I am sure it is one which will repay investigation. Such a study involves the careful histological examination, in equine fœtuses, of the tissues which ultimately become the paradidymis. I can recommend the investigation to some enthusiastic student of embryology.

Professor HOBDAY (in reply) again emphasised the hereditary tendency of cryptorchidism and insisted on the importance of future investigation of the comparative prevalence of dermoid and dentigerous cysts in the retained testicles of horses as compared with this condition in man. He also referred to the comparative rarity of these cysts in the ovaries of mares as contrasted with, its frequency in human ovaries.

The cause for these differences required further elucidation and research.

Obituary.

Captain T. A. HUBAND.

The death of Captain T. A. Huband, F.R.C.V.S., occurred at the Freemasons' Hospital, Fulham Road, on the morning of 25th December.

Captain Huband qualified at London in 1881, and was 69 years of age last March. He leaves a widow, daughter, son and stepson.

Obituary.

Dr. J. J. Schmidt.

(*The following notice is contributed by Dr. C. O. Jensen, and translated by Dr. H. O. Schmit-Jensen, of Copenhagen.*)

Jorgen Jorgensen Schmidt died at Kolding, on November 12th, 1923, from apoplexy. He had had a slight attack a month earlier from which he but partially recovered.

Dr. Schmidt was born on July 15th, 1845, in Sillcrup, near Haderslev, and was therefore 78 years old. In 1872, at the age of 27, he passed his veterinary examination at the Copenhagen School, after which he settled as a veterinary practitioner in Brorup. At the same time he lectured on the treatment of domestic animals at the Brorup High School. In 1874 he removed to Smidstrup and in 1885 to Kolding.

Schmidt was soon to be highly esteemed as a keen observer and an independent reasoner. His name became early known outside his district when he called attention to the increasing "lung sickness" in cattle. He advocated that stock-owners would save much loss from this disease if only they would have their animals thoroughly examined clinically (the tuberculin test was not known then) several times a year, and were willing to remove for fattening purposes the attacked and suspected animals. Schmidt soon acquired a remarkable routine in this diagnostic work, and in the course of the years following 1880 he carried out much valuable work on these lines in the manorial herds in Jutland. In 1881-2 he published several papers on his observations on the clinical examination of the lungs in cattle, supplemented by further contributions on the same subject a few years later. It lies beyond doubt that the work so initiated by Schmidt might have been of the greatest importance if only his colleagues all over the country had adopted his ideas. When our knowledge of tuberculosis in cattle advanced and the contagiousness of the disease was clear, Schmidt was amongst the first to advocate legal provisions to combat the disease.

Dr. Schmidt's principal work, which made his name known all over the world, was his studies on Milk Fever and its Treatment, communicated to the Danish Veterinary Association at its meeting in Copenhagen, in September, 1897, and later published in the "Maanedsskrift for Dyrlaeger," Vol. 9. No doubt the reflections that made him attempt a treatment of the udder for the purpose of depressing the milk secretion were wrong—the etiology of milk fever still remains obscure—but the results of his method were so convincing that there was left no room for opposition. In this connection it ought to be emphasised that Schmidt's method was not due to a lucky hit, but was the final result of purposeful reasoning supported by careful observations representing the labour of years.

The statistical material presented by Schmidt in 1897 was so convincing that a great many Danish veterinarians at once proceeded to try the new method. Two months later it was possible to register 412 cases of milk fever treated in Denmark by Schmidt's method, 86·41 per cent. of which had recovered.

Within the first year statistics comprising 1,701 cases were collected by C. O. Jensen, then lecturer at the Veterinary High School of Copenhagen, Schmidt being far too modest a man to undertake a work of this kind himself. Similar publications from foreign countries soon confirmed the results obtained by Danish veterinarians, and in the course of a few years Schmidt's name, with perfect justice, became known amongst veterinary surgeons and stock-breeders all over the world.

Dr. Schmidt's later publications consist in the main of observations from veterinary practice. The objects have not been of special importance, but the papers all evince the author's keen faculty of observation, his critical sense, and his wide-ranging knowledge.

Dr. Schmidt was naturally the object of much gratitude on the part of veterinary and agricultural associations at home and abroad. In 1906 the Danish Government conferred on him a life pension of honour (2,000 Dan. Kr., later raised to 6,000 Dan. Kr.). The Berlin Veterinary High School made him an Honorary Doctor of Veterinary Science, and in the course of years he became an Honorary Member of many foreign veterinary societies. He was the recipient of Danish, Norwegian, and Belgian Orders of Knighthood.

Amongst Danish colleagues Schmidt will be remembered not only as the man who, by his clever discovery, made a step in advance of the greatest economic importance to his country and his profession, but also as a remarkably modest and genial man, as a kind and fair-minded colleague, honoured and liked by all. C. O. J.

[In this country Dr. Schmidt's work has been known and appreciated for the past quarter of a century. His name was proposed for election as an Honorary Associate of the Royal College of Veterinary Surgeons in 1914, at the time of the International Veterinary Congress, among a large number of other names of veterinary surgeons of renown. The honour was, however, not conferred on him at that time, it being decided to restrict it to certain representatives of the Permanent Commission of International Veterinary Congresses. The Great War then held up the consideration of any further re-elections to the Honorary Associateship, but it is gratifying to think that the Council of the College awarded the Diploma to Dr. Schmidt in July last, and that he received and acknowledged the honour during the same month.—Ed. *V.R.*].

The Irish Free State Department of Agriculture has prohibited the landing of hay or straw in any form from any part of Great Britain.

Lancashire Education Committee have approved of a national poultry institute and research station being established in Lancashire.

The Veterinary Record.

12th January, 1924.

National Veterinary Medical Association of Great Britain and Ireland, Limited.

EDITORIAL OFFICE: 10 Cray's Inn Square, London, W.C.1.

Cheques should be made payable and all communications sent to the General Secretary at the Offices of the Association, 10 Gray's Inn Square, London, W.C.1.

TUBERCULOSIS.

Great as the interest and anxiety of the profession must be with regard to the present epizootic of foot-and-mouth disease, we must not lose sight of the fact that this disease is not by any means the greatest problem that lies before us for solution. Tuberculosis in cattle and pigs ranks first, and for many years will continue to rank first, both in its importance to agriculture and to public health, and also to our profession. In process of time, and with active Government control, "foot-and-mouth" will be stamped out once more, but it will be many years before we can get efficient legislation to be able to say the same of tuberculosis. The part that we play in obtaining such legislation, the work that we do to educate our clients, first as to the necessity, and secondly as to the means of eradicating the disease, the ability and knowledge we show in conducting this work either in private practice or in public service—these will eventually determine for us the status of our profession and the position we shall be able to attain in matters pertaining to public health.

Mr. McGregor, Assistant Veterinary Inspector for the County of Lanarkshire, in a very able and thoughtful paper on the Problem of Tuberculosis, which we published last week, writes as follows:—

"The tuberculosis problem is tremendous in its scope, and by the ability and zeal of our profession to deal with that part of the problem which is purely veterinary shall we be judged by the public, and, if the verdict goes against us, one of the penalties we may expect to receive as the reward for our unprofitable service is the abolition of our one portal system of entrance into the profession. Public opinion will gradually determine our status in public health matters, and it is our duty favourably to influence that opinion by the means at our disposal. Propaganda through the press is a factor not to be despised, but to become really effective it requires to be backed up by conscientious service on our part. In this work each one of us is an agent, and it is too often forgotten that the influence of the profession is the summation of the influences of its individual members."

We entirely agree with Mr. McGregor, and we would like to know that his paper and the subsequent discussion upon it had been carefully read and digested by every practising veterinary surgeon.

The Milk and Dairies Act Amendment Act and the Orders made under it, providing for graded milk, are steps in the right direction, but at the present time are valueless, and will continue to be so until we can secure the re-introduction of the 1914 Tuberculosis Order, and the control by Government of tuberculin. For more than four years Veterinary Societies, and in later years the N.V.M.A., and its Divisions, have passed resolutions urging the necessity of both these measures, but apparently the Government can do nothing owing to lack of money. It seems to us that money has been almost thrown away in sums of many millions at a time, which, if applied to the eradication of tubercle would have been of far greater benefit not only to the present but to future generations. The Government, after all, is only the reflection of public opinion (or should be so), and if the Government is reluctant to act, we must force it by having with us the full weight of public opinion.

We suggest that this subject be brought up once more before each of our divisions at the earliest possible opportunity, and that each division submit, and subsequently forward to us, a resolution calling upon the Government to re-introduce the Tuberculosis Order next year. We should then have organised veterinary opinion, from every district in the kingdom, which could be brought before the General Meeting at Aberdeen and dealt with in such a manner that the voice of our profession speaking as a whole should be heard by every public health authority and by every member of parliament, as well as by every society or body of men interested in questions of public health or agriculture, or in the breeding of stock or the production of milk.

With regard to the question of tuberculin, we hope to deal with this on a future occasion, but suffice it to say that the N.V.M.A. is actively concerned in this matter at the present time, and will allow no opportunity to pass in order to purge thecountry of the present fraudulent use which is being made of tuberculin, to the detriment of our profession and of the whole trade in cattle which is carried on in this country.

Clinical Report.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases.

Treatment with Autogenous Vaccines.

By HAROLD S. ROBINSON, M.R.C.V.S., Newport, Mon.

ABSCESS IN TERRIER.

The subject was a valuable wire-haired fox terrier, six months old, which was brought to me on November 24th, 1922, suffering from a swelling about the size of a florin an inch above the eye. No history of a blow could be ascertained. Hot fomentation was applied, and on the 26th the abscess was lanced and about a wineglass of creamy, yellow pus, slightly bloodstained, evacuated. The cavity was irrigated with lysol and eusol solutions, but pus continued to accumulate.

On December 15th I gave a hypodermic of morphia and injected cocaine locally and curetted the skull bone, very thoroughly syringed the cavity and packed it with B.I.P.P. The owner carried out some of this treatment, and he was very thorough, but the discharge still persisted, and on January 12th I sent a swab of pus to Mr. W. M. Scott, F.R.C.V.S., Bridgwater, who prepared a course of vaccine, six ampules in all, and reported the presence of the following organisms:—(*a*) *Streptococcus brevis*; (*b*) *Gram + Diplococcus.* The first dose was given on January 20th, just two months after my first visit, local treatment having failed to bring about recovery. During the vaccine treatment the abscess cavity was not dressed. After the fourth dose I was called to see the case again as the wound looked unpleasant to the owner. I found a piece of necrosed bone protruding from the wound. This I removed, syringed the cavity with lysol, and in about a week the wound healed, the case making a good recovery. The patient has since won about 50 prizes. A rather curious condition in connection with the above case has since come to my notice. Last week I was called to see a puppy, the offspring of this dog. This puppy shows a distinct birth-mark in the form of a hairless scar—black—in exactly the same situation as the abscess in his sire.

FISTULOUS WITHERS IN A PONY.

A six-year-old milk pony was brought to the surgery suffering from a painful swelling on each side of the withers on February 26th, 1922. After my experience by vaccine treatment in the canine case, I decided to adopt similar treatment in this. I opened the swellings, allowed free drainage, and sent a swab to Mr. Scott, who supplied me with six ampules, the organisms present being (*a*) *Staphylococcus albus*; (*b*) *Diplococcus.* Four doses were given, *i.e.*, on March 2nd, 8th, 14th and 20th. No other treatment was used, the swellings subsided, and the wounds healed without interruption. The pony is still in the town, and an expert could not say he had ever had fistulous withers.

(*Continued at foot of next column.*)

Divisional Report.

The North Midland Division.*

A meeting of the above division was held at Furnival Road, Sheffield, on October 16th, 1923, when there were present the President (Mr. S. E. Sampson), Messrs. T. C. Fletcher, W. G. Jones, W. Murgatroyd, J. H. Yates, S. H. Nixon, H. L. Torrance and J. S. Lloyd, of Sheffield: Mr. R. Hudson, Retford; Mr. W. Collinson, South Anston; Mr. T. Scott, Pontefract; Mr. G. J. Furness, Alfreton; Mr. E. G. Johnson, Beighton; Mr. G. Green, Rotherham; Mr. T. Bowett, Worksop; Mr. M. Robinson, Barnsley; and Mr. E. Marrison, Bakewell.

Visitors:—Mr. H. W. Good, Scarborough; Mr. P. M. Evershed, Nottingham; Mr. T. C. Hall, Knaresborough; Mr. W. A. Campbell, Boroughbridge; Mr. J. Lindsay, Dumfries; and Mr. O. Stinson, Appleby.

(*Continued from previous column.*)

FISTULOUS WITHERS IN A GELDING.

On April 28th, 1922, I was consulted upon a six-year-old farm gelding with bilateral swelling of the withers of fairly recent origin. These were lanced and a swab sent to Mr. Scott, who reported the presence of (*a*) *Streptococcus longus*, and (*b*) *Staphylococcus albus* in the pus and from which a course of vaccines was prepared. Considerable difficulty was experienced in keeping the wounds open. After the fourth dose the wounds had healed, but there was still some swelling. The remaining two doses were injected and the patient turned out for a month, some swelling still remaining, but which was not painful. I advised putting the animal to work in a collar. The swelling gradually subsided, and now no mark is left. I have often found that pressure of the collar, far from being harmful, is often useful in dispersing swellings about the shoulders after abscess formations.

FISTULOUS WITHERS IN AN OLD MARE.

This subject was an old farm mare suffering from bilateral fistula of the withers. The swelling was lanced and a swab sent to Mr. Scott, who reported the presence of (*a*) *Staphylococcus albus* and *aureus*: (*b*) *Diplococcus.* Six ampules of vaccine were forwarded. The case made good progress up to the fifth dose, and the mare was turned out to grass. I called to give the last dose, the owner stating the case had improved. On my next visit, however, fourteen days later, the swelling was as large as ever, and being a valueless animal, it was sent to the kennels. I blame the bad results in this case to re-infection with soil germs. I may not be right, but I do not think the vaccines had a good trial, and of course one must not overlook the fact that the animal was old and probably its responses to vaccine therapy were very feeble.

* Received on December 23rd, 1923.

The first part of the meeting consisted of two operations :—

(1) Chloroforming and castrating a boar, by Mr. H. W. Good, M.R.C.V.S., Scarborough. The boar was roped as if for ringing and the rope passed over a pulley to raise the fore-feet of the boar slightly from the ground. The chloroform mask was then applied and one ounce of chloroform administered. Anæsthesia quickly took place; the boar was gently lowered to the ground and the operation of castration performed by means of the Haussmann-Dunn instrument. The whole operation took only a little over five minutes.

(2) Removing an enlarged lymphatic gland of the throat of a cow, by Mr. R. Hudson, F.R.C.V.S., Retford. The cow was cast in the usual way and the chloroform mask applied. As soon as anæsthesia took place the neck was stretched and an incision over one lymphatic gland was made. Part of the skin, where possible, was separated by the fingers so as to avoid hæmorrhage, but a considerable part of the separation had to be done by means of the knife, the blood vessels being taken up and ligatured. The second gland had previously suppurated and cicatrised. Where this had taken place the skin was cut on either side of the cicatrice and again separated from the enlarged gland, the same procedure as in the case of the first gland being carried out. Both glands were successfully removed and the wounds swabbed out with antiseptic, packed with cotton wool and sutured. Both the boar and the cow made satisfactory recoveries.

The tumours, in the case of the cow, weighed considerably over two pounds, and a microscopical examination made by Mr. H. L. Torrance of a scraping from one of them showed definite evidence of tuberculosis.

After the operations, a considerable number of those present took tea at the invitation of the Association and after tea an interesting discussion took place regarding the operations. The President, Mr. Sampson, presided at the first part of the meeting, but had to leave owing to another engagement. Mr. T. C. Fletcher, one of the Past-Presidents, then took the Chair.

The *minutes* of the last meeting of the Association and of the Council were read and signed.

Consideration was given to the application of Dr. Bradley on behalf of the Centenary Fund of the Royal (Dick) Veterinary College. The Hon. Secretary proposed and Mr. Hudson seconded, and it was carried, that a donation of £5 5s. (five guineas) be given to the Fund.

Upon the motion of Mr. Hudson, seconded by Mr. Collinson, Mr. P. M. Evershed, of Nottingham, was nominated for membership of the Association.

A very cordial vote of thanks to Mr. Good and Mr. Hudson was passed upon the motion of the President.

The President then invited discussion in regard to the operations.

Mr. Campbell said two things had struck him in regard to the castration of the boar. One was the raising of the fore-feet from the ground, which, owing to the animal's inability to move, seemed to facilitate the method of chloroforming. He also thought the emasculator used acted well as against the ligature or écraseur. He mentioned cases of castration where the testicle had dropped off by its own weight. He was pleased to know from Mr. Good that the whole of the membranes of the testicle were included in the instrument. He wished to thank Mr. Good and Mr. Hudson cordially for coming and performing the operations, and thanked the Association for inviting others than members of the Association to be present.

Mr. T. C. Fletcher said he was struck by the quick method in which the operation of castration was performed, but in his practice he preferred the use of the actual cautery to prevent hæmorrhage. Mr. Hudson agreed that the method of chloroforming was good and thought the position of the head helped. Falling off of the testicle during the operation was fairly common and there was not much danger of hæmorrhage. Some castrators removed the testicle by drawing out the cord. The Haussmann-Dunn castrator had been used successfully. After the operation, to prevent sepsis, a handful of common salt applied as a dressing answered well. Necrosis in connection with the wound was very dangerous. He had found exercise very beneficial.

Mr. W. Collinson joined in thanking Mr. Good for operating. In castrating boars he used the écraseur, but did not chloroform. He found falling off of the testicle common. He also used salt as an antiseptic dressing to the scrotum after the operation. He would like to know if Mr. Hudson had used a local anæsthetic in such cases, and what fee should be charged when chloroform was used in the operation —he usually charged 7s. 6d. Mr. Hudson, in reply, said he had tried cocaine locally, but it was not very successful in anæsthetising the skin unless it covered a very wide area. Local anæsthesia was more successful when injected into the testicle than into the skin. He thought the charge, including chloroform, should be 10s. 6d. when done during an ordinary round in practice.

Mr. Sampson said the operation was of benefit to him as he wanted to see the method of using chloroform. The method would be very useful in cases of prolapse of the rectum. He thought chloroform would be of great benefit to the Veterinary Profession in performing the operation of castration of boars and would lead humane owners to employ veterinary surgeons rather than ordinary castrators.

Mr. Scott wanted to know if the use of chloroform was always successful in causing anæsthesia.

Mr. Fletcher imagined, from the remarks of Mr. Good, that it was usually successful. Chloroform operations would be good for the country practitioner.

Mr. Green asked what would be the result of chloroform upon the carcases in cases that proved fatal. Mr. Torrance reported a case of a boar bolting after opening the scrotum, where the testicles were literally trampled off, but the boar did splendidly. The Hon. Secretary reported a case of an animal

that had been chloroformed for operation and to prevent fatal consequences the animal was slaughtered and the carcase removed to a slaughterhouse and dressed. At his *post-mortem* examination the following day he found no evidence of the chloroform in the carcase. Mr. CAMPBELL asked what action would be taken in regard to boars who would not take chloroform, and he would also like to know if local anæsthesia was generally used in docking foals. Because of the action taken under the Protection of Animals Act, castrators were refusing to carry out docking of foals and farmers who were doing it themselves were being prosecuted.

Mr. HUDSON, in describing his operation, said he had performed it in his practice for a number of years with satisfactory results. He had only had one mishap. Even apparent "screws" had done well afterwards. The condition of large glands of the throat he found fairly common, particularly in Lincolnshire. He found enlarged glands below the ear, at the angle of the jaw, in the maxillary space and occasionally down the neck. The original seat of the trouble was the lymphatic gland. There were two lymphatic glands in connection with the parotid salivary gland. Abscesses might form in one or more of these glands, and could be evacuated externally; but, in the case of the lateral or supra-pharyngeal glands, the operation had to be carried out through the mouth. For the operation he employed a long-handled concealed knife, one hand holding the knife, the other directing it to the seat of operation. When in place, the knife was exposed and the enlarged gland incised, the contents, if pus, being evacuated. In many cases it was his experience that the gland soon filled up again and, generally speaking, he recommended that "snorers" or "roarers" should be slaughtered. The external operation was really the same as taking out an ordinary tumour. The chief object was to avoid blood vessels and prevent hæmorrhage. Many of these blood vessels, although originally small, had become large, due to the inflammatory changes that had taken place and, unless properly ligatured, were liable to give rise to serious hæmorrhage. After the primary incision the section should be carefully carried out and the large blood vessels ligatured while proceeding. At one time he used the écraseur to take out enlarged glands, but the abscess under the skin sometimes burst and caused serious sepsis. The operation he had just performed that day was difficult owing to the bad light, and the blood vessels could not always be found, so to prevent hæmorrhage he had to plug the wound and ligature tightly. In good cases he mopped out the wound with cotton wool, plugged with cotton wool and sutured, leaving an aperture for the removal of the plug, dusting over the suture with an antiseptic powder. He always removed the plug within 24 hours, washed out the cavity and plugged again. The wound usually healed in three weeks. Incisions into the salivary gland whilst operating did not appear to be dangerous as the animal generally did well. Operations for the entire removal of the glands were very successful where multiple abscesses were present. In the latter cases if they were only evacuated by lancing, several operations had to be repeated, as one was not able generally to evacuate all the abscesses situated in one particular section.

Mr. FLETCHER wondered if the operation would prove successful financially in private practice. If the gland was tuberculous, was the cow worth the operation? The old Lincolnshire treatment carried out years ago was to rub the enlarged gland with a brick and afterwards apply nitric acid. Such enlarged glands were then thought to be tuberculous and cases often did well. He hoped Mr. Torrance would examine the gland removed that day and decide if that case was tuberculous, and let the gentlemen present at the operation know when they read the report.

Mr. LINDSAY thanked the Association very cordially for allowing him to be present. He thought the boar was very docile, and congratulated Mr. Good upon his operation. He thought the emasculator used was a very good instrument. He was afraid, however, that the Scottish pig keepers would not pay 10s. 6d. for the operation. His operation for removing an enlarged gland was carried out under local anæsthesia, but the operation was not common in his practice. Cattle with enlarged glands in Scotland would not be allowed to enter fat stock markets. He would like to know how many visits Mr. Hudson would pay to such cases. He congratulated Mr. Hudson upon his operation and method. Would separation by the fingers be more successful than by means of the knife, in the prevention of hæmorrhage? He would like to know if the internal operation in "snorers" would be beneficial.

Mr. COLLINSON wished to know if Mr. Hudson could say if the cattle on certain farms were more commonly affected than on others. Mr. GREEN asked if the operation was justified in practice. In his opinion, many cattle did well without the operation. He thought, if there was liability to contaminate other parts by the spread of the infection, the operation would probably be justified. Would the animal be worth more if the operation was successfully carried out? If the animal was, then he thought the operation was justified. Was evacuation of the abscess as successful as complete removal of the enlarged gland?

Mr. CAMPBELL thanked Mr. Hudson for his operation. If the animal was a "screw" he thought the operation was not justified. In roaring—pharyngeal abscess—evacuation was often followed by "schirrous throat" and roaring followed again. Slaughter was often advisable instead of operating. In some cases iodine and bin-iodide were successful. In the case of one enlarged gland he usually advocated fattening the animal and killing. He thought such cases were generally tuberculous.

The HON. SECRETARY joined in thanking Mr. Good for his operation on the boar, and related some experiences he had had, as a young practitioner, in castrating large numbers of boars for a pig feeder, who

bought them up cheaply in the market, turned them out to graze for several months in the summer and fattened them for the butcher the following winter. The feeder claimed that this procedure was a financial success.

Mr. LINDSAY enquired if it was necessary to stop the sale and use of milk from cows which had tuberculous nodules in the udder.

Mr. HUDSON replied that, unless the udder was affected with tuberculosis, he did not think there was any danger. He was pleased with such a good discussion. In his opinion enlarged glands of the throat were generally tuberculous, although they might occasionally be actino-mycotic or due to pus-forming germs. In his opinion such operations were justified, as often in such cases the operation hindered further infection taking place. His cases generally had been financially successful. Local anæsthesia might be employed in some cases, but when deep-seated, general anæthesia was necessary. When good cows were operated upon they were worth several visits and good attention. When poor, he often left the case to the farmer to dress and finish, in that way cutting down expenses. He did not think separation with the fingers was always sufficient—generally the knife was necessary to break down the fibrous adhesions. "Snoring" cows, where the defect was due to post-pharyngeal abscess, were common in his practice. He punctured such with the long-handled knife with a concealed blade and had used it successfully. Sometimes it was difficult to evacuate the abscess, owing to inspissated pus, in other cases the swelling was fibrous and could not be removed. It was impossible entirely to remove the post-pharyngeal gland by the internal operation. In Lincolnshire, "wens" were very common. If cows so affected were also affected with tuberculosis in the chest, such cases were not worth operating upon, whilst the animal, if otherwise sound, should be so dealt with. Simple evacuation of fluid pus might first be carried out, but generally evisceration was needed after. Evacuation and caustic dressing might satisfactorily deal with such cases. Cases due to actino-mycosis would probably benefit from the iodine and bin-iodide treatment, but if the gums, jaw bones or posterior nares were affected, he did not think such treatment was justified.

Mr. COLLINSON wished Mr. Hudson to report the progress of his case—operated upon that day—as it would be very interesting.

Mr. HUDSON hoped Mr. Torrance would make a microscopic examination of the tumours removed that day and let the result be included in the report of the meeting. He gave particulars of a very successful case carried out in an old cow.

A vote of thanks to the Chairman was carried with acclamation.

J. S. LLOYD, *Hon. Secretary.*

Notes and News.

The Editor will be glad to receive items of professional interest in these columns

Diary of Events.

Jan. 16th—South Eastern Division, Annual Meeting and Dinner at Tunbridge Wells.
Jan. 25th—Royal Counties Division Meeting at Reading, followed by Annual Dinner.
Feb. 8th—Midland Division, Annual General Meeting at Birmingham.

A fortnight ago we stated that we believed we were right in saying that Mr. Wright was the first student to obtain 1st class honours since Professor Wooldridge was successful in 1899. We have been promptly put right and it is a pleasure to state the facts correctly. In 1901, F. W. Robardes (Dartford) and W. T. Olver (Tamworth) gained 1st class honours in the July examinations, while in 1902, E. C. Webb (Fleet, Hants.) gained a 1st class also. Without in any way casting any reflection on the merits of those whose names have been mentioned, we must state our candid opinion that the standard of examination to-day is higher than it was twenty and more years ago, and this adds lustre to Mr. Wright's achievement.

* * * *

Amongst the names of new Fellows to be elected next week to the Royal Society of Medicine we notice the names of Professor E. G. Langford, of the Royal Veterinary College, and Mr. John H. Mason, M.R.C.V.S., who has recently been appointed to the Wolverhampton General Hospital as Bacteriologist; also Mr. R. E. Glover, of Sutton, Surrey, who has taken up his duties with the Medical Research Council, and of whom we hear on all sides that he is one of our cleverest and most promising research workers. These gentlemen will add considerable strength to the veterinary contingent in the Section of Comparative Medicine.

* * * *

Arrangements have been made whereby Captain H. V. M. Metivier, O.B.E., B.Sc., M.R.C.V.S., will deliver a course of lectures on Veterinary Tropical Medicine at the Imperial College of Tropical Agriculture, Trinidad, during the coming academic year. The example thus set might well be followed elsewhere.

Foot-and-Mouth Disease.

THE CHESHIRE BALLOT.

The result of the ballot by Cheshire farmers' unions on the respective policies of slaughter and isolation and treatment (states a *Times* Nantwich correspondent) is overwhelmingly in favour of the

(*Continued in second column of next page.*)

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

The Comparative Section of the Royal Society of Medicine.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I am very sorry that the writer of the leading article in the *Veterinary Record* for December 22nd, 1923, should so have misunderstood what I said at the Annual Dinner of the Royal Society of Medicine that he should write "the impression likely to be conveyed to the general public is that the Section (Comparative Medicine) is composed of medical men only who are committed to the study of diseases in animals." What I really said is accurately expressed in the reporter's shorthand report, which reads thus: "These considerations moved your Council during the past summer, and they decided that the best way of meeting the difficulty was to form a Section of Comparative Medicine. This is now being done, and in order that both sides shall be represented, the human side as well as diseases of animals, it has been laid down that the officers of that Section shall consist in equal numbers of those interested in human medicine and those interested in diseases of animals."

Directly I read the leading article I asked one who heard my speech, and he at once said that the impression conveyed to him by it was not that formed by the writer of the article. Most cordially can I say that the Royal Society of Medicine will welcome heartily at its new Section any work that throws light on diseases of animals, and I hope and believe we shall get important contributions from those who practise veterinary medicine. Half the officers, half the council, and one of its new secretaries are exclusively engaged in this branch of medicine.

The writer of the leading article regrets that I did not use the words "veterinary surgeons." I, of course, included them among those studying diseases of animals, purposely omitting the word "veterinary," for veterinary diseases are the diseases of beasts of burden and cattle, but I wished to show the public that our new Section takes a wide view which, while it includes these, also desires to promote the advance of knowledge of disease in all animals.

I do trust that this letter will absolve me from all appearance of having wished to belittle veterinary medicine. My intention was otherwise, for I wished to exalt it, and I hope that for many years our new Section, with the help of those working exclusively among animals, will throw a flood of light on medicine as a whole.—Yours faithfully, W. HALE-WHITE, President, Royal Society of Medicine, 1 Wimpole Street, London, W.

January 2nd, 1924.

Enlightenment at Last!

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Whoever wrote the article on foot-and-mouth disease which appeared in *The Times* of Thursday, December 20th, has done more to vindicate veterinary science and to crush all critics—lay, veterinary and medical—of the slaughter policy of the Government than the rest of the Veterinary Profession put together. To me, the facts and arguments put forward in that masterly article seem unanswerable, and therefore I consider the writer of it deserves the gratitude and thanks of the whole profession. It shows the influence of the *one* mind, which knows its strength.

I hope the article will be reproduced in the *Veterinary Record* to enlighten those of its readers who were, or are, ignorant of the grounds on which the stamping-out or slaughter policy is based. Perhaps the M.A. might do worse than have it reprinted and disseminated among those farmers who have had, or are likely to have, their cattle slaughtered. I believe it would do more than anything else to raise in the public estimation the high plane on which veterinary science stands at the present day.—Yours faithfully, HENRY GRAY, 1 Redfield Lane, S.W.5.

December 24th, 1923.

[The article to which our correspondent refers has already been reproduced.—ED.].

Answers to Correspondents.

J. Cameron.—Many thanks for your letter. Will try and make use of part of it. Many of your suggestions have already been put into practice.

A. N. Pillers.—Thanks for suggestions, which are receiving consideration.

H. Gray.—Your clinical communication is unavoidably held over till next week.

The Editor begs to acknowledge the receipt of the following:

Communications from Mr. A. W. Noel-Pillers and Major R. F. Stirling.

Lincolnshire and District meeting report, from Mr. W. W. Lang, Hon. Secretary.

Yorkshire Division meeting report, from Mr. J. Clarkson, Hon. Secretary.

(*Continued from previous page.*)

Ministry's policy. In 14 unions 577 voted for continued slaughtering and 152 for isolation and treatment.

During the week-end there were 60 fresh outbreaks of foot-and-mouth disease confirmed throughout the country. Of this total 40 were reported from Cheshire, four from Salop, three from Staffordshire, two from Banffshire, and one from each of 11 other counties.

These figures, as covering two days, encourage the hope, according to an official at the Ministry of Agriculture yesterday, that the hold gained by the disease is at last weakening, though it was said to be still too early to make a definite pronouncement on the question.

The total number of outbreaks since August 27th last, up to and including Sunday, stands at 2,098. The numbers of animals slaughtered are:—Cattle, 71,775; sheep, 25,788; pigs, 34,557; and goats, 72. Total, 132,192.

The total gross amount paid or payable in compensation is £2,137,000, and the estimated amount recovered or recoverable from the salvage of healthy carcases is £290,500.

CAPTAIN BENNET.

Captain Bennet, M.R.C.V.S., the well-known amateur rider, who at the time of writing (Tuesday) had been unconscious for eleven days as the result of his mount Ardeen falling with him at Wolverhampton, is reported to be slowly regaining consciousness. As yet, however, he has not been able to recognise anybody.

He was removed from Wolverhampton to a London nursing home on Monday, and stood the journey well.

Royal College of Veterinary Surgeons.

NOMINATIONS FOR ELECTION TO COUNCIL, 1924.

C. BLACKHURST, Broughton. Proposers, J. D. Whitehead, F.R.C.V.S., John Spruell, M.R.C.V.S.

Professor J. B. BUXTON, Cambridge. Proposers, J. McKinna, F.R.C.V.S., Dr. O. Charnock Bradley, M.D.

J. CLARKSON, Garforth. Proposers, J. McKinna, F.R.C.V.S., H. G. Bowes, F.R.C.V.S.

G. H. LOCKE, Manchester. Proposers, J. D. Whitehead, F.R.C.V.S., John Spruell, M.R.C.V.S.

Sir JOHN M'FADYEAN, London. Proposers, Dr. O. Charnock Bradley, M.D., W. J. Mulvey, F.R.C.V.S., J.P.

W. D. REES, Trelaw. Proposers, J. J. Aveston, M.R.C.V.S., C. E. Perry, F.R.C.V.S.

Professor J. SHARE-JONES, Liverpool. Proposers, Professor J. F. Craig, M.A., M.R.C.V.S., Professor A. W. Whitehouse, M.R.C.V.S.

J. WILLETT, London. Proposers, H. Sumner, M.R.C.V.S., H. J. Dawes, F.R.C.V.S.

ROYAL (DICK) VETERINARY COLLEGE CENTENARY BAZAAR.

The £5 note was drawn for on Thursday, 3rd January, by Lady Turner, Belfast.

Winning Ticket No. 306.

(Mrs.) A. D. Smith, 410 Beersbridge Road, Belfast.

BOTULISM

is the term applied to an intoxication produced by the toxin of Bacillus Botulinus, Types A and B. The symptom-complex of botulinus poisoning in domestic animals is identical with a number of conditions frequently observed in horses, cattle, sheep, and often referred to as

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Blind Staggers
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Voluntary testimonials of a remarkable character are constantly received. The original letters may be inspected by members of the Veterinary Profession, or copies will be sent willingly on application being made.

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writes:

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